

In section 2 of the Office Action, claims 1 – 3, 5 – 12, 14, 15, 17 – 19 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by European Patent Application Publication No. 0 439 127 to Heffner (hereinafter “the Heffner application”). This set of claims contains four independent claims, namely claims 1, 10, 11 and 17. Applicants are traversing this rejection on the grounds that the Heffner application does not describe all of the elements of the independent claims.

Claim 1 provides for a method of determination of at least one optical parameter of an optical signal. The method includes, *inter alia*, manipulating a beam of the optical signal, the manipulation having polarization properties that are dependent on a position in the beam laterally with respect to a direction of propagation of the beam during manipulation. The beam is manipulated by (a) retarding the beam, the retardation being dependent of the position in the beam laterally with respect to a direction of propagation of the beam during retardation, and (b) detecting intensities in at least three parts of the beam in their dependency of the position in the beam laterally with respect to a direction of propagation of the beam during detection.

An exemplary embodiment of an apparatus for employment of the method of claim 1 is illustrated in FIG. 1 and described in the specification at page 7, lines 3 – 20. FIG. 1 shows a laser source 10, retardation plates 2 and 4, a polarizer 6, and a four-quadrant detector 12. A beam 8 originating from laser source 10 propagates through retardation plates 2 and 4, and through polarizer 6, to four-quadrant detector 12. A polarization-sensitive intensity variation across the diameter of beam 8 is detected in the different segments of four-quadrant detector 12.

Note that at retardation plates 2 and 4, the retardation of beam 8 is dependent of the position in the beam 8 laterally with respect to a direction of propagation of the beam during retardation. Also note that four-quadrant detector 12 detects intensities in at least three parts of beam 8 in their dependency of the position in beam 8 laterally with respect to a direction of propagation of beam 8 during detection.

The Heffner application is directed toward a fast optical polarization meter. The meter operates by splitting a light beam into four beams, passing three of the beams through optical elements, and measuring the transmitted intensity of all four beams (Abstract). The detecting operation is described on page 3, lines 47 – 49, which states:

The four beams are focused by the lens 8 into a four-detector array; each of the beams a – d is focused on its respective photodetector, 9 – 12, and substantially absorbed. Each detector generates an electrical signal that is proportional to the intensity of the light absorbed by the detector.

Thus, the Heffner application describes an apparatus that **splits a light beam into four beams, and detects each of the beams individually**. In contrast, the method of claim 1 is directed to **an individual beam**, and furthermore, Applicant has not found that the Heffner application discloses polarization **properties that are dependent on a position in the beam laterally**. Consequently, the Heffner application does not describe (i) polarization properties that are dependent on a position in the beam laterally with respect to a direction of propagation of the beam, (ii) retardation being dependent of the position in the beam laterally with respect to a direction of propagation of the beam during retardation, and (iii) detecting intensities in at least three parts of the beam in their dependency of the position in the beam laterally with respect to a direction of propagation of the beam during detection, as recited in claim 1. As such, the Heffner application does not anticipate claim 1.

Independent claims 10 and 11 each include recitals similar to that of claim 1, as described above. Accordingly, the Heffner application does not anticipate either of independent claims 10 or 11.

Independent claim 17 provides an element for manipulating an optical signal. The element comprises, *inter alia*, sub-elements having a variation in a manipulation property along its axis. The Heffner application does not describe sub-elements having a variation in

a manipulation property along its axis, as recited in claim 17. Thus, the Heffner patent does not anticipate claim 17.

Claims 2, 3, and 5 – 9 depend from claim 1, claims 12, 14, 15 and 21 depend from claim 11, and claims 18 and 19 depend from claim 17. Because of these dependencies, the Heffner application does not anticipate any of dependent claims 2, 3, 5 – 9, 12, 14, 15, 18, 19 or 21.

Applicants respectfully request reconsideration and withdrawal of the section 102(b) rejection of claims 1 – 3, 5 – 12, 14, 15, 17 – 19 and 21.

In section 4 of the Office Action, claims 4 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Heffner application. Applicants respectfully traverse this rejection.

Claims 4 and 16 depend from claims 1 and 11, respectively. Above, Applicants explained that the Heffner application does not describe (i) polarization properties that are dependent on a position in the beam laterally with respect to a direction of propagation of the beam, (ii) retardation being dependent of the position in the beam laterally with respect to a direction of propagation of the beam during retardation, and (iii) detecting intensities in at least three parts of the beam in their dependency of the position in the beam laterally with respect to a direction of propagation of the beam during detection, as recited in claims 1 and 11. As such, the Heffner application neither describes nor suggests the subject matter of the independent claims, and in particular claims 1 and 11. Consequently, claims 4 and 16, because of their dependence on claim 1 and 11, respectively, are patentable over the Heffner application.

Applicants respectfully request reconsideration and withdrawal of the section 103(a) rejection of claims 4 and 16.

In view of the foregoing, Applicants respectfully submit that all claims presented in this application patentably distinguish over the prior art. Accordingly, Applicants respectfully request favorable consideration and that this application be passed to allowance.

Respectfully submitted,

8-17-03
Date

Paul D. Greeley
Paul D. Greeley, Esq.
Reg. No. 31,019
Attorney for the Applicants
Ohlandt, Greeley, Ruggiero & Perle, L.L.P.
One Landmark Square, 10th Floor
Stamford, CT 06901-2682
Tel: 203-327-4500
Fax: 203-327-6401